

CHAPTER 13 - CONSTRUCTION DOCUMENTS**1.0 General Information and Formatting**

- 1.1. Policies and procedures contained in this chapter apply to restricted and unrestricted capital improvement projects. Any deviation from any of the requirements in this chapter shall either be negotiated during the fee negotiation phase or requested and approved by DFM prior to commencing with the work.
- 1.2. The project title shall be written in the following order: agency abbreviation, building name and a title of work. (Example: KDOT Horton Subarea Shop HVAC Upgrade.)
- 1.3. All drawings shall comply with the current United States National CAD Standard as published by the National Institute of Building Sciences, unless otherwise modified by the requirements in this manual. Additional information is available at <http://www.nationalcadstandard.org>.
 - 1.3.1 Review drawings shall be provided on bond and/or in electronic .PDF.
 - 1.3.2 DFM is not able to receive .ZIP files.
- 1.4. Technical specifications shall be project specific and edited from the current edition of a guide specification similar to Arcom's MasterSpec or BSD's SpecLink-E, using the CSI Master Format section, numbering and outline formats for the 49 Division, 6-digit section number format.
 - 1.4.1 Review technical specifications shall be provided in electronic .PDF unless requested on bond by the owner and/or DFM.

2.0 Final Drawing Requirements

- 2.1. The Construction Document Checklist FPDC Form 223, found under "Planning Forms" on the DFM website www.da.ks.gov/fp/, will be used to provide a complete set of construction documents.
- 2.2. Drawing space on each drawing sheet shall be used efficiently, limiting white or blank spaces.
- 2.3. The size of drawing sheets shall be 24" x 36".
 - 2.3.1 Drawing sheets larger or smaller than 24" x 36" shall be approved by DFM prior to beginning the drawings.
- 2.4. Text fonts used on drawings should be "sans serif" for readability.
 - 2.4.1 For drawings 24" x 36" or larger, the minimum plotted text size for general notes not associated with a drawing shall be minimum 1/8". All scalable text (text not part of an AutoCAD symbol) on these drawings shall be a minimum of 3/32" plotted at full size.
 - 2.4.2 All text and line weights at full size shall be legible and readable at half size reduction. Lightweight fonts for dimensions are discouraged.
- 2.5. Each drawing sheet, including the cover sheet, will have a title block, as shown on the graphic sample provided at the end of the Construction Document Checklist FPDC Form 223.
 - 2.5.1 The title block on the 24" x 36" sheet should be a minimum of 2" wide and contain the information indicated on the Graphic Sample.

- 2.5.2 The lower 12-inch section of the title block is reserved for the state's project information.
- 2.5.3 The upper half of the title block shall contain all firm and consultant information, logos and seals. No firm information should be outside the title block.
- 2.6. All floor plans, including demolition, architectural, structural framing, mechanical and electrical plans shall be oriented the same direction, preferably oriented with a north arrow pointing to the top of the page, and shall have both a numeric scale and a graphic scale.
- 2.7. All building floor plans, i.e. architectural, reflected ceiling, roof, structural, mechanical, plumbing, electrical, lighting, fire suppression, shall be drawn to a scale of not less than one-eighth inch per foot. Floor plans of buildings less than 100 feet in length should be drawn at a scale of one-fourth inch per foot. Regardless of scale, all plans shall be the same scale, except site plans, enlarged plans and details.
- 2.8. Each plan, detail and drawing shown on the documents shall be drawn accurately, and have the appropriate title and scale indicated.
- 2.9. Each discipline shall provide a legend, using symbols and notations standard to the industry, indicating each symbol's meaning, and shall be located on the first sheet of each discipline's individual set of plans.
- 3.0 Final Technical Specification Requirements
 - 3.1. Technical specifications prepared by the project architect/engineer shall be delivered on 8.5 x 11 sheets of white, 20 lb. bond and electronic .PDF.
 - 3.1.1 Specifications shall be double-sided. The beginning of each specification section shall begin on the right hand or odd page.
 - 3.1.2 Shall **not** be stapled or hole-punched.
 - 3.1.3 Shall match DFM format.
 - 3.1.3.1 Each page shall have a single column format with equal margins on both the right and left sides
 - 3.1.3.2 Each page shall have the DFM project number, specification section number and a page number.
 - 3.1.3.3 Side margins shall be set a 3/4" maximum (for conservation of paper).
 - 3.1.3.4 Top and bottom margins shall be 1/2" maximum.
 - 3.1.3.5 Fonts shall be Arial or Helvetica fonts at 10pt.
- 4.0 Document Review Submittals and Procedures
 - 4.1. Two in-progress reviews of the construction documents are required unless otherwise negotiated, one review at 50% document completion and one review at final document completion, when the documents are "bid-ready". The following items should be provided in all review documents:
 - 4.1.1 Request for Review Form FPDC Form 120 at each phase.

- 4.1.2 Compliance with applicable codes, standards and laws listed in the firm's contract, and outlined in Chapter 7, including an updated code footprint.
 - 4.1.3 Coordinated structural, architectural, mechanical, plumbing, fire suppression/fire alarm and electrical drawings with specifications.
 - 4.1.4 Updated construction costs at each phase.
 - 4.1.4.1 When the project architect's or project engineer's construction estimate exceeds the agency's programmed construction budget, approved at the initial fee negotiation, it is the responsibility of the agency to assist the firm in identifying options and means (including a decrease in scope, material selection and/or alternates, etc.) to bring the firm's estimate within the programmed budget.
 - 4.1.5 Updated project schedule.
 - 4.1.6 Drawings submitted on bond.
 - 4.1.7 Technical specifications submitted in electronic .PDF ("enabled" for editing comments, mark-ups and word search), unless otherwise approved.
- 5.0 50% Document Review Submittal
- 5.1. Refinement of all design development requirements from Chapter 12.
 - 5.2. Updated code footprint.
 - 5.3. Details showing construction of walls, doors and other components that are related to building code and accessibility standards.
 - 5.4. Detail dimensions.
 - 5.5. A roof plan showing roof slope, parapets, scuppers and roof drains as applicable to the project.
 - 5.6. A structural plan for each level showing basic information as it relates to the structural components of the building.
 - 5.7. Exterior elevations showing finish and existing grades.
 - 5.8. Building sections, wall sections and critical details shall be identified.
 - 5.9. Refinement of proposed building systems including sprinkler and fire alarm systems.
 - 5.10. Preliminary finish schedule.
 - 5.11. Outline technical specifications and material cut sheets to adequately describe equipment, materials and special requirements, including data on major materials, building systems and fire-resistive assemblies.
 - 5.11.1 Locate and detail all fire-rated devices, dampers, assemblies, partitions, structural protections, etc. to sufficiently explain fire-rating requirements and shall be shown coordinated throughout the drawings.

- 5.11.2 Each fire-rated assembly shall be identified by its Underwriters Laboratory (UL) design number or shall be an approved assembly by the IBC.

6.0 Final Document Review Submittal

- 6.1. A code foot print approved by DFM, and as applicable, the Kansas State Fire Marshal.
- 6.2. Coordinated structural, architectural, mechanical, electrical, plumbing, and fire suppression/fire alarm, "bid ready" drawings with technical specifications.
- 6.3. An updated estimate of all construction costs, including alternates to demonstrate the base bid is within the agency's programmed budget.

7.0 Bid Document Deliverables

- 7.1. Deliverables shall be submitted both electronically and on paper.
 - 7.1.1 All electronic .PDF deliverables shall be on one CD / DVD for use with the electronic plan room and archiving at DFM.
 - 7.1.2 Items marked with an asterisk (*) only need to be submitted on paper.
- 7.2. *An approved code footprint, signed by all parties on file at DFM.
- 7.3. Final drawings on shall be vellum or Mylar®.
 - 7.3.1 Title blocks as described at the end of the Construction Document Checklist FPDC Form 223, shall contain the appropriate discipline's seal, signed and dated across the seal.
 - 7.3.2 Each drawing sheet shall be its own file in electronic .PDF at 300 dpi resolution and include:
 - 7.3.2.1 Drawing file titles with a 3-digit numerical prefix (beginning with 001), the sheet number and a brief description of the sheet content. Drawing files are to be titled in the numerical order that the project architect/engineer intends the drawing set to be displayed.
 - 7.3.2.2 The following is an example of the titles for drawing files.
001-1.0-Cover-Sheet
002-C.1-Civil-Site-Plan
003-A.1-Floor-Plan
004-S.1-Structural-Framing
005-Etc.

Note: Do not leave blank spaces in the electronic file name.
 - 7.3.3 A professional seal with signature and date, readable at the intended size of the drawing.
 - 7.3.3.1 Electronic signatures are recognized by the Kansas State Board of Technical Professions. Specific regulations and standards are available at the KSBTP website at <http://www.kansas.gov/ksbtp/seals.html>.
- 7.4. Technical specifications and all other information listed below shall be submitted on white, 20 lb. bond paper and electronic .PDF.

- 7.4.1 Each technical specification Division with applicable Sections shall be bundled as one (1) .PDF file per specification Division.
 - 7.4.1.1 Each specification file, and all other information files, titles shall include a 3-digit numerical prefix and title.
 - 7.4.1.2 Each specification file created by the project architect/engineer shall be numbered in the order the project architect/engineer intends the information to be displayed. 001, 004, 005 are reserved for DFM use.
 - 7.4.1.3 The following is an example of the electronic .PDF titles for specification files.
 - 001-Cover (reserved for DFM & not required in A/E electronic files)
 - 002-Professional-Seal(s)
 - 003-Table-of-Contents (project architect/engineer creates in .DOC/.DOCX, DFM to complete and convert to .PDF)
 - 004-Frontend-Documents-A-I (reserved for DFM & not required in A/E electronic files)
 - 005-Division-01-General-Requirements (reserved for DFM use & not required in A/E electronic files)
 - 006-Division-XX (Divisions & Sections as applicable to the project)
 - 007-Etc.
- Note: Do not leave blank spaces in the title of the electronic documents.
- 7.4.2 All technical reports, legal descriptions, documents, records and/or papers prepared by the design team for the project shall be:
 - 7.4.2.1 Sealed, signed and dated unless otherwise approved by DFM.
 - 7.4.2.2 Added to the end of the specifications as an attachment.
- 7.4.3 One 8.5 x 11 sheet (or separate pages) of white 20 lb. bond with the project title, DFM project number, agency name and each professional's seal, signed and dated.
- 7.4.4 A completed Table of Contents prepared in electronic .DOC / .DOCX, using the DFM template located under "Planning Forms" on the DFM website at www.da.ks.gov/fp/, and listed in the following order.
 - 7.4.4.1 DFM documents A-I (already listed on the template).
 - 7.4.4.2 DFM Division I General Requirements.
 - 7.4.4.3 Project architect/engineer Division 1 sections.
 - 7.4.4.4 Project architect/engineer technical specifications.
 - 7.4.4.5 Appendices, if applicable.
 - 7.4.4.6 Page numbers formatted as shown on the template.
- 7.4.5 Division 1 sections, edited and formatted as supplements to DFM Documents A-I and DFM Division 1 shall be submitted in electronic .DOC / .DOCX.

- 7.4.6 When used, full descriptions of alternates, unit prices and allowances shall be included in the project architect/engineer's Division 1 section.
- 7.4.7 Each alternate shall be mutually exclusive from all other alternates and described as such on the appropriate drawing sheet and specification section.
- 7.4.8 Alternates and unit prices shall be designated with whole numbers, without subsets. (Example: Alt. 1, Alt. 2, Alt. 3, etc.)
- 7.5. A completed Specification Front-End Data FPDC Form 305.
 - 7.5.1 Alternates shall be summarized for use on Document C – Form of Bid, using the same titles as the project architect/engineer's Division 1.
 - 7.5.2 When a project's funding source (i.e. federal funds) requires additional or non-standard procedures and/or forms beyond State of Kansas requirements, the agency shall identify and specify the procedures on a separate sheet attached to the Front End Data FPDC Form 305 and shall provide the forms to DFM for publishing.
- 8.0 End of Construction Document Phase
 - 8.1. When the agency and DFM concur that the above requirements are met, the Construction Document Phase is complete.

END OF CHAPTER 13